# AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph on page 9 beginning on line 1 and ending on line 18 with the following:

As discussed in the Background section, conventional warhead designs and methods cannot achieve a hard kill by breaking an incoming threat, such as a KER or heat round (shaped charge) into many pieces. Conventional warheads can only achieve soft or deflection kills of the KER or heat round which does not ensure high probability of survival of a home vehicle, e.g., a tank or armored personnel carrier. As shown in Fig. 1, conventional warhead 10 deploys fragments 12 such that the majority (e.g., 97%) of fragments 12 miss intended incoming threat or target 14 (e.g., a KER or a heat round). As shown in Fig. 2, where like parts have been given like numbers, prior art blast or fragmentation-type warhead 10 produces spray pattern 13 with small section 16 of penetrators 12 which actually impact KER ~~12~~ 14. In this example, only about 2-3% of fragments 12 hit KER 14, while about 97% fragments miss KER ~~12~~ 14 and are wasted. As shown above, only about 2-3% of fragments 12 have the potential to impact the small diameter rod of KER 14. Additionally, if the miss distance is somewhat large, then fragments 12 would spread far away, generating holes in spray pattern 13, hence allowing the KER 14 to fly through spray pattern 13 without being hit. Conventional blast fragmentation-type warhead 10, Figs. 1 and 2, therefore, lacks the overall number of hits of fragments 12 on incoming threat or KER 14 to effectively destroy KER 14 or alter its flight path.

Please replace the paragraphs on page 12 beginning on line 6 and ending on line 22 with the following:

Vehicle-borne system ~~10~~ 100, Fig. 4 for countering incoming threat ~~12~~ 120 of this invention includes sensing device ~~14~~ 140 configured to sense incoming threat ~~12~~ 120. Sensing device ~~14~~ 140 may be a multidirectional radar sensor, as shown in Fig. 5. Incoming threat ~~12~~ 120, Fig. 4 may be a kinetic energy round (KER), as indicated at 15, Fig. 6 which is used to penetrate the armor of a vehicle, such as a tank 21, Fig. 4, or armored personnel carrier 19, or similar armored vehicles. Incoming threat ~~12~~ 120 may also be a shaped charge or heat round, as indicated at 17, Fig. 6, which is designed to penetrate the tank by creating many small fragments. The shaped type charge round indicated at 17 contains high explosive ~~19~~ 190 and is often referred to as a heat round. This type of incoming threat warhead forms a hyper velocity jet which penetrates a tank wall at high velocity and destroys all tank components.

Vehicle-borne system ~~10~~ 100, Fig. 4 also includes active protection system (APS) ~~16~~ 160, shown in greater detail in Fig. 7A. Active Protection System ~~16~~ 160 includes maneuverable interceptor 18 (shown in flight in Fig. 4) which incorporates a plurality of kinetic energy rods, such as kinetic energy rods ~~20~~ 200, Figs. 8A-8C and explosive charge ~~22~~ 220 configured to aim kinetic energy rods ~~20~~ 200 in a predetermined direction, e.g., at incoming threat ~~12~~ 120, Fig. 4, as indicated by arrow 39.

Please replace the paragraph on page 12 beginning on line 23 and ending on page 13, line 6 with the following:

Interceptor 18 ideally includes a warhead section 48, shown in greater detail in

Figs. 8A and 8C which includes plurality of bays 50 for incorporating kinetic energy rods ~~20~~ 200, detonator 23, and explosive charge ~~22~~ 220. An enlarged view of a single bay section of plurality of bays 50 is shown in Fig. 8B. Plurality of bays 50, Fig. 8C are orientated such that kinetic energy rods ~~20~~ 200 are deployed in different directions, as indicated by arrows ~~24~~ 25, 26, and 28 to create disbursed cloud 34, Fig. 4. The shape of explosive charge section ~~22~~ 220, Fig. 8C also aids in the formation of dispersed cloud 34 of kinetic rods, Fig. 4.

Please replace the paragraphs on page 13 beginning on line 7 and ending on page 14, line 3 with the following:

As shown in Fig. 9, interceptor or aimable explosive charge ~~18~~ 220 of vehicle-borne system ~~10~~ 100 mounted on tank 43 deploys all of kinetic energy rods ~~20~~ 200 in the direction of incoming threat ~~12~~ 120 to form highly dense cloud 34 of kinetic energy rods ~~20~~ 200 which breaks and destroys incoming threat ~~12~~ 120 on impact.

In one design, kinetic energy rods ~~20~~ 200, Figs. 4, and 8A-8C may be made of tantalum and may be hexagon shaped. Typically, the preferred kinetic energy rods (projectiles) do not have a cylindrical cross section and instead may have a star-shaped cross section, a cruciform cross section, or the like. Also, the kinetic energy rods may have a pointed nose or at least a non-flat nose such as a wedge-shaped nose. Kinetic energy rod 240, Fig. 10 has a pointed nose while projectile 242, Fig. 11 has a cruciform cross-section. Other kinetic energy rod shapes are shown at 244, Fig. 12 (a tristar-shape); projectile 246 (disk shaped), Fig. 13; projectile 248, Fig. 14; (truncated cone shaped nose), and wedge shaped projectile 250, Fig. 15. Kinetic energy rods or projectiles 252, Fig. 16

have a star-shaped cross section, pointed noses, and flat distal ends. The increased packaging efficiency of these specially shaped projectiles is shown in Fig. 17 where sixteen star-shaped projectiles can be packaged in the same space previously occupied by nine penetrators or projectiles with a cylindrical shape. Further details regarding the shapes and operation of the kinetic energy rods of this invention are found in the co-pending applications cited *supra*. Ideally, kinetic energy rods 20 are ductile in construction to prevent shattering of the rods upon deployment.

Please replace the paragraphs on page 14 beginning on line 4 and ending on page 14, line 22 with the following:

Active Protection System ~~16~~ 160, Fig. 7A also includes detection subsystem 30 configured to support the maneuver of the interceptor 18 (also shown in Fig. 4) to intercept incoming threat ~~12~~ 120. Detection subsystem 30, Fig. 7A is configured to determine if interceptor 18, Fig. ~~3~~ 4 will miss incoming threat ~~12~~ 120, as indicated by trajectory path 32, and if so, initiate explosive charge ~~22~~ 220, Figs. ~~7A-7C~~ 8A-8C to aim kinetic energy rods ~~20~~ 200 into disbursed cloud 34, Fig. 4 in the trajectory path of the incoming threat, e.g., trajectory path 40, which is between incoming threat ~~12~~ 120 and vehicle 21 to destroy or disrupt trajectory path 40 of incoming threat ~~12~~ 120.

Active protection system ~~16~~ 160, Fig. 7A may include radar module 60, Fig. 7B for determining if interceptor 18 will miss incoming threat ~~12~~ 120, Fig. 4. APS ~~16~~ 160, Fig. 7A may also include control unit 62 for initiating the explosive charge (e.g., explosive charge ~~22~~ 220, Figs. 8A-8C) and aiming kinetic energy rods ~~22~~ 220 to form disbursed cloud 34, Fig. 4, if interceptor 18 will miss incoming threat ~~12~~ 120. System ~~10~~ 100 also

includes a maneuvering or thruster device (not shown) configured to maneuver interceptor 18 to intercept the incoming threat. Each interceptor 18, Figs. 4 and 7A contains a small divert actuator control (DAC) system (not shown). The DAC system consists of propellant with small nozzles, based on the incoming threat type. The DAC fires to move interceptor 18 as close as possible to the enemy round or incoming threat ~~12~~ 120. Ideally, the warhead is fired shortly before engagement.

Please replace the paragraph on page 14 beginning on line 23 and ending on page 15, line 6 with the following:

The result is that vehicle-borne system ~~10~~ 100, Fig. 4 of this invention effectively destroys or disrupts the flight path of incoming threat ~~12~~ 120, even if interceptor 18 misses the intended incoming threat because disbursed cloud 34 with kinetic energy rods ~~22~~ 220 disbursed therein can alter the flight path of incoming threat ~~12~~ 120, as indicated by altered trajectory paths 46 and 47 such that the incoming threat will fall well short of the intended target vehicle, e.g., tank 21 or armored personnel carrier 19, or completely destroy incoming threat ~~12~~ 120, as indicated by arrow ~~48~~ 480.

Please replace the paragraphs on page 15 beginning on line 7 and ending on page 15, line 22 with the following:

Typically, vehicle-borne system ~~10~~ 100 of this invention is mounted on a tank, such as a BMP-3 ICV tank shown in Fig. 18, the T-80UM2 tank as shown in Fig. 19, or the T-80UM1 (Snow Leopard) tank as shown in Fig. 20. Fig. 21 shows an enlarged view of APS system 16, Fig. 7A, fitted on the BMP-3 ICV tank, Fig. 18. In other embodiments of

this invention, vehicle-borne system ~~10~~ 100 can be mounted on an armored personnel carrier, such as armored personnel carrier 19, Fig. 4.

The vehicle-borne incoming threat countering method of the subject invention includes the steps of: sensing an incoming threat ~~12~~ 120, Fig. 4, step ~~10~~ 100, Fig. 22; activating active protection system 16, Figs. 4 and 7A which includes maneuverable interceptor 18 incorporating a plurality of kinetic energy rods ~~20~~ 200, Figs. 4 and 8A-8C and explosive charge ~~22~~ 220 configured to aim kinetic energy rods ~~20~~ 200 in a predetermined direction to intercept incoming threat ~~12~~ 120, Fig. 4, step ~~102~~ 1020, Fig. 22; maneuvering interceptor 18 to intercept incoming threat 120, Fig. 4, step 1040, Fig. 22; detecting whether interceptor 18, Fig. 4 will miss incoming threat ~~12~~ 120, and if interceptor 18 will miss incoming threat ~~12~~ 120, then initiating explosive charge ~~22~~ 220, Figs. 8A and 8C to aim kinetic energy rods ~~20~~ 200 into disbursed cloud 34, Fig. 4 in trajectory path 40 of incoming threat ~~12~~ 120 and between incoming threat ~~12~~ 120 and vehicle 21 or 19, step ~~106~~ 1060, Fig. 22.